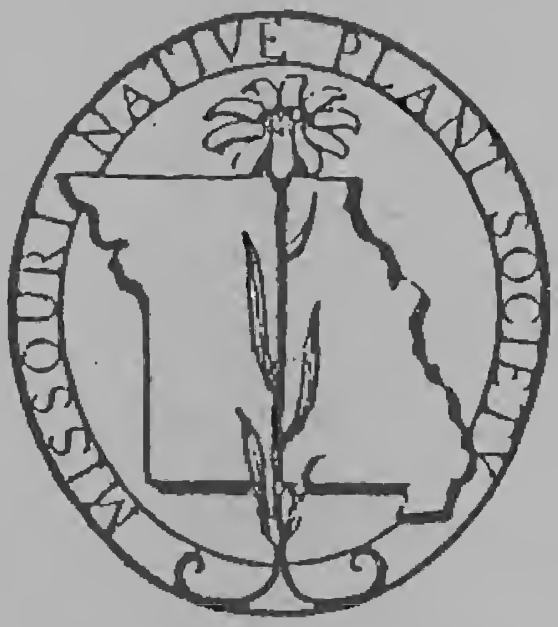
Volume 10 1989 Number 1

MISSOURIENSIS



JOURNAL OF THE
MISSOURI NATIVE PLANT SOCIETY

Published for the Society
At
Southwest Missouri State University, Springfield

CONTENTS

Missouriensis is the official publication of the Missouri Native Plant Society. Founded in 1979 as a non-profit corporation, the Society is devoted to the conservation and study of the plants growing wild in Missouri, to the education of the public about the significance of the native flora and its habitat, and to the publication of related information.

Stylisma pickeringii (Torr. ex M. A. Curtis) A. Gray var.*pattersoni* (Fern. & Schub.) Myint. (Convolvulaceae): New to the Flora of Missouri
MELVIN L. CONRAD 1

Native Missouri Plants at the Missouri Botanical Garden
JOYCE BROUGHTON AND GEORGE ROGERS 4

Missouri *Carex* Notes 4. *Carex bicknellii* var. *opaca* in Missouri
DAVID CASTANER 13

Studies in the flora of Missouri, I. New records of introduced taxa.
GEORGE YATSKIEVYCH AND DENNIS FIGG 16

Minutes of the MoNPS Board Meeting - 15 April 1989
MARY SUSAN TAYLOR 20

Missouri Botanical Record
WALLACE R. WEBER AND WILLIAM CORCORAN 24

Figure 1. Xerograph of *Stylisma pickeringii* var. *pattersoni* (X 0.4). One of the numerous primary prostrate stems which radiate from the center of the plant (at right) is shown with upright axillary branches and inflorescences.

Oklahoma and eastern Texas, as well as Iowa and Illinois (Myint 1966). Steyermark (1963) did not include it in the *Flora of Missouri*, but mentioned that it occurred in adjacent states. In addition to the Henderson County, Illinois, collection noted earlier, Mohlenbrock (1975) reports this taxon to be very rare in Illinois and includes Cass and Mason Counties in its distribution. Another nearby location was recorded by Pammel & Repppert (*1221*, MO!) from Muscatine County, Iowa. Both this and the Henderson County, Illinois, locations occur along the Mississippi River less than 100 miles north of the Missouri location.

Voucher specimens are deposited in the following herbaria: *Walker 487* (NEMO), and *Conrad 11099* (MO, NEMO).

LITERATURE CITED

Fernald, M. L. & B. G. Schubert. 1949. Some identities in *Breweria*. Rhodora 51: 35-42.

Jones, G. N. 1955. *Stylisma*, in G. N. Jones & G. D. Fuller, *Vascular Plants of Illinois*. The University of Illinois Press, Urbana, pp. 387-388.

Mohlenbrock, R. H. 1975. *Guide to the Vascular Flora of Illinois*. Southern Illinois University Press, Carbondale.

Myint, T. 1966. Revision of the genus *Stylisma* (Convolvulaceae). Brittonia 18: 97-116.

Steyermark, J. A. 1963. *Flora of Missouri*. Iowa State University Press, Ames. 1728 pp.

THIS PAGE IS TO BE PASTED OVER PAGE 3 OF VOLUME 10(1).

NATIVE MISSOURI PLANTS AT THE MISSOURI BOTANICAL GARDEN

Joyce Broughton and George Rogers
Missouri Botanical Garden
P. O. Box 299
St. Louis, MO 63166

INTRODUCTION

In this paper we highlight the Missouri Botanical Garden in St. Louis as an opportunity to observe quickly and easily a large number of plants native to Missouri. We recognize that there is no substitute for taking to the woods, but a visit to the Garden is good preparation for the botanical exploration of Missouri. These cultivated native plants also offer a unique chance for study, photography, art, class outings, and teacher preparation. Over 170 native plants of Missouri are displayed at the Garden and this short guide will make them easy to locate. Figure 1 is a grid map, and coordinates corresponding to the map are listed with each species in the tables or text.

The number of native plants at the Garden is increasing. Woody plants are being repopulated largely by collecting wild, well-documented Missouri species, and rare species are being established at the Garden through the efforts of the Center for Plant Conservation, a national effort aimed at saving endangered species through cultivation in botanical gardens (Lewin 1989).

SPECIES THAT ARE RARE OR MAY NO LONGER GROW IN THE WILD IN MISSOURI

Calamagrostis insperata is a grass once found in Ohio and Missouri. Not observed in Missouri in recent decades, the species clings to life in two sites in southern Ohio: one is on the edge of a cliff in a defoliated power cut, and the other is on land owned by a paper company. This species can be seen in the new portion of the Woodland Garden (grid coordinates 18K).

Discovered in Missouri by the late Dr. Julian Steyermark, the Alabama Snow-wreath (*Neviusia alabamensis*, Rose Family, Rosaceae) is no longer found in the state, except for the clump in the Woodland Garden (10K). Wild populations persist in Tennessee, Alabama, Arkansas, Georgia and Mississippi (Long 1989; Rogers & Wilmes 1989). A little reminiscent of spiraeas, also in the Rose Family, the Alabama Snow-wreath flowers in April producing starry, delicate, apetalous flowers with showy stamens. It is scheduled to enter the nursery trade, through ethical channels, in 1990 (Rogers & Wilmes, l.c.).

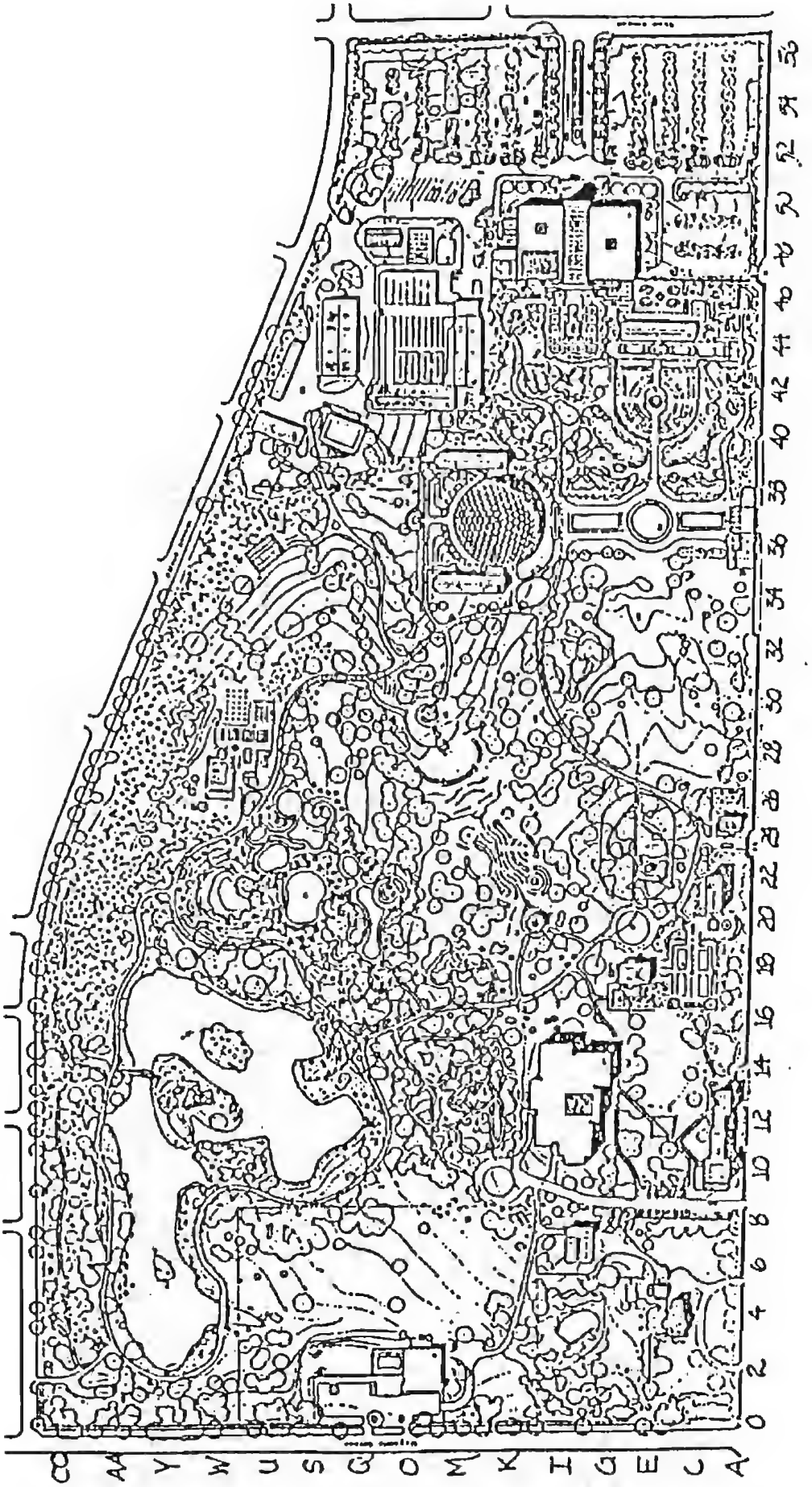


Figure 1. Map of Missouri Botanical Garden. Note coordinates -- these correspond to coordinates given in figures and text.

Boltonia decurrens (Composite Family, Asteraceae), is still found at one site in Missouri along the delta of the Missouri River. It also occurs in Illinois at about 14 localities along the Illinois River and in a wet meadow near East St. Louis. Rambunctious in cultivation, this aster-like novelty can reach well over six feet tall, and literally become covered with white to pale purplish flowering heads. This species can be seen in the Rock Garden (39J) (Price & Rogers 1988).

Pondberry (*Linderia melissifolia*, Laurel Family, Lauraceae) is known from just one (protected) low woods in southern Missouri and in about seven widely scattered spots across the Southeast United States. This small suckering shrub produces glossy bright red fruits a little like, but much prettier, than those of barberries. Several individuals can be viewed in the Woodland Garden (10K) close to the Alabama Snow-Wreath. This species is treated in detail by Steyermark (1949).

Rare and in decline across much of the eastern United States and Ontario, the Heart-leaved Plaintain (*Plantago cordata*, Plantain Family, Plantaginaceae) is faring well in the relatively clean streambeds of the Missouri Ozarks. One population even grows near the edge of urban St. Louis. This species is found in the new portion of the Woodland Garden (18K). This plantain is unusual in that it releases its seeds into its stream home attached to a float derived from the placenta (Fig. 2). Sticky when released from the float, the seeds cling to rocks and sticks in the stream (Tessene 1969)

Because of its rarity, the Royal Catchfly (*Silene regia*, Pink Family, Caryophyllaceae) has attracted a great deal of attention. A dazzling species with scarlet flowers, it inhabits prairies and certain prairie-like habitats. As prairies have disappeared, the royal catchfly has declined to the point that it is now best known in such prairie remnants as old cemeteries and railroad right-of-ways. Its flowers are pollinated by hummingbirds, as are those of its neighbor in the new portion of the Woodland Garden (18K), the Cardinal Flower (*Lobelia cardinalis*, Bellflower Family, Campanulaceae). A third red-flowered, rare native Missouri wildflower, the bird-pollinated Pinkroot (*Spigelia marilandica*, Strychnine Family, Loganiaceae) is also found in the Woodland Garden (11N). Once far more common, this species has the unfortunate (for it) attribute of being more poisonous to intestinal worms than to their hosts (it is also dangerous for the hosts). Probably this well known fact led to the tremendous popularity and commercial value of the Pinkroot as a cure-all. Consequently, collectors have altogether eliminated it from parts of its range.

NATIVE TREES
(Figure 3)

The assortment of native trees at the Missouri Botanical Garden is

fascinating. There are fourteen native oaks (with additional species in propagation), Red Buckeyes and Ohio Buckeyes, hickories, walnuts, ashes, maples, persimmons, various leguminous species, and many others. One of the more

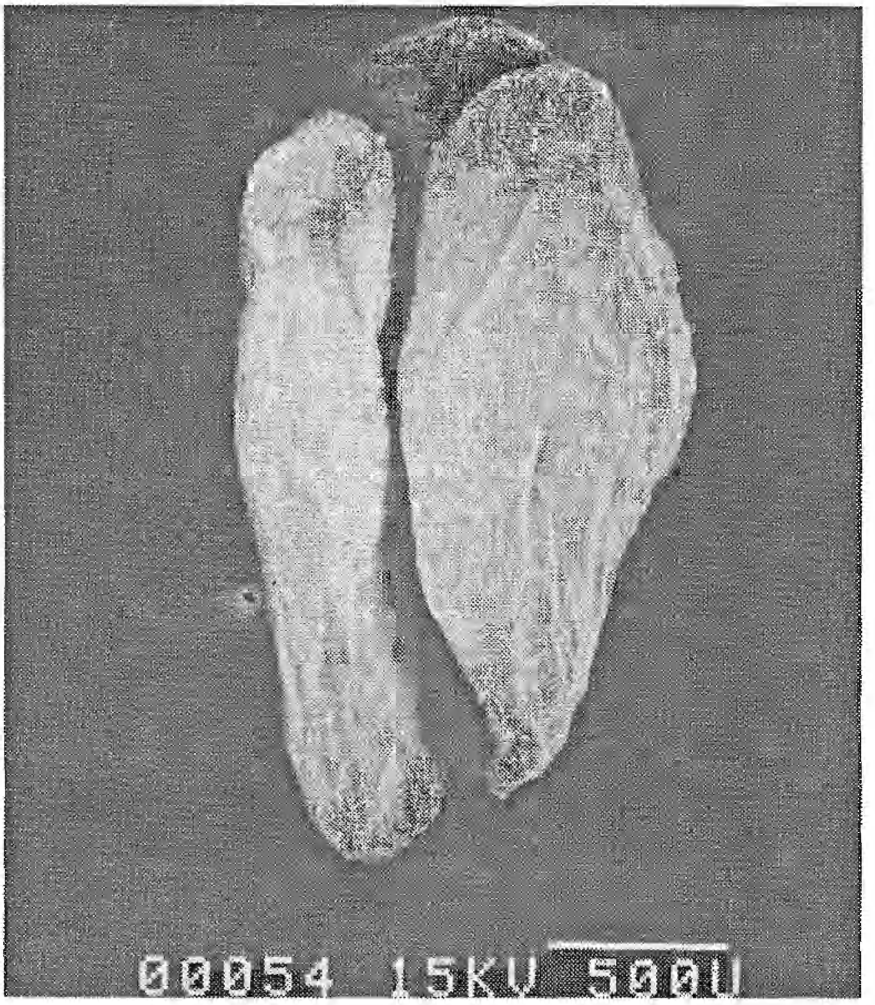


Figure 2. Two seeds of *Plantago cordata* attached to float (placenta) visible behind and rising above the seeds. X35.

interesting species is the Pawpaw (*Asimina triloba*, Custard-Apple Family, Annonaceae), a northern offshoot of the genus *Asimina*, which is otherwise largely confined to the Southeastern United States. As a genus, *Asimina* is a northern representative of this predominantly tropical family. Its lurid purple, probably beetle-pollinated, flowers and banana-shaped, cloying fruits look more like they belong in Brazil than in Missouri.

Rare in Missouri, the Yellowwood (*Cladrastis kentuckea*, Pea Family, Leguminosae) is a legume that produces sprays of white, fragrant flowers in the late spring or early summer. Our specimen is the largest or second-largest Yellowwood in Missouri. Near this large, venerable tree in the Jenkins Daylily Garden is another Missouri oddity, Corkwood (*Leitneria floridana*, Corkwood Family, Leitneriaceae), which scarcely qualifies as a

tree. This suckering inhabits southern Missouri in low, wet spots including roadside ditches. A little west of the Corkwood, near the center of the

14M Acer rubrum
13L Acer saccharinum
16K Acer saccharum
18K Aesculus glabra
11K Aesculus pavia
11N Asimina triloba
31F Betula nigra
00X Carpinus caroliniana
12M Carya cordiformis
12N Carya tomentosa
16O Catalpa speciosa
14M Celtis laevigata
15K Celtis occidentalis
12J Cercis canadensis
3Y Chionanthus virginicus
15L Cladrastis kentuckea
9M Cornus florida
29B Cotinus obovatus
44A Crataegus crus-galli
3J Crataegus mollis
39D Crataegus viridis
11J Diospyros virginiana
16J Fagus grandifolia
17H Fraxinus americana
29K Fraxinus quadrangulata
15N Fraxinus tomentosa
8B Gleditsia triacanthos
44H Gymnocladus dioicus
24D Ilex decidua
18P Ilex opaca
13M Juglans nigra
27C Leitneria floridana
14O Liquidambar styraciflua
13J Liriodendron tulipifera
17C Magnolia acuminata
32F Nyssa sylvatica
15O Ostrya virginiana
12L Platanus occidentalis
14K Populus deltoides
37N Populus tremuloides
4T Prunus serotina
11K Quercus alba
13O Quercus bicolor
29C Quercus coccinea
6S Quercus falcata
6S Quercus imbricaria
28Q Quercus lyrata
15N Quercus macrocarpa
21F Quercus michauxii
15L Quercus muehlenbergii
11N Quercus palustris
24F Quercus phellos
19K Quercus rubra
12N Quercus shumardii
6Q Quercus velutina
12M Robinia pseudoacacia
27K Sapindus drummondii
12M Sassafras albidum
35H Taxodium distichum
18T Tilia americana
20N Tilia heterophylla
15K Ulmus americana

Figure 3. Native Trees

ing roadside ditches. A little west of the Corkwood, near the center of the Garden, is a single specimen of Soapberry (*Sapindus drummondii*, Soapberry Family, Sapindaceae), a predominatly tropical family that includes the more familiar Goldenrain Tree, *Koelreuteria paniculata*, an Asian species). eastern limit in southern Missouri. The English name for the species refers to its translucent, orange (later blackening), pea-sized fruits borne in grapelike clusters. The fruits lather-making compounds are known as saponins. In Mexico the frothy *Sapindus* fruits serve as natural soap and can be used to kill fish.

For floral beauty it is difficult to beat the Garden's sizable population of Flowering Dogwood (*Cornus florida*, Dogwood Family, Cornaceae) in April. Later in May, the more subtle, low tree or shrub, known as the Fringetree (*Chionanthus virginicus*, Olive Family, Oleaceae) decorates the Garden with its delicate white flowers. The Olive Family also includes such familar plants as exotic lilacs, native ashes, escaped privet, and the native Swamp-privet (*Forestiera acuminata*).

NATIVE WILDFLOWERS
(Figure 4)

The wildflower list must be interpreted with caution, since this collec-

13L	Actaea pachypoda	11M	Euphorbia corollata	38J	Oenothera missouriensis
17K	Amsonia illustris	9L	Filipendula ruba	38I	Penstemon arkansanus
10M	Anemone canadensis	13M	Gentiana andrewsii	14J	Phlox divaricata
14L	Anemone virginiana	18K	Geranium maculatum	11L	Phlox paniculata
12M	Aquilegia canadensis	14J	Hepatica acutiloba	15L	Podophyllum peltatum
10M	Arisaema dracontium	16K	Hepatica americana	12L	Polygonatum biflorum
12L	Arisaema triphyllum	10N	Hydrastis canadensis	13J	Ratibida pinnata
15N	Asarum canadense	13K	Iresine rhizomatosa	13M	Rudbeckia fulgida
18L	Asclepias tuberosa	33C	Iris brevicaulis	44D	Salvia azurea
18L	Asclepias verticillata	33C	Iris cristata	17K	Sanguinaria canadensis
43D	Baptisia australis	33C	Iris fulva	13M	Stylophorum diphyllum
10M	Caulophyllum thalictroides	18L	Liatris pycnostachya	11M	Tovara virginiana
13L	Cimicifuga racemosa	19L	Liatris spicata	11M	Tradescantia longipes
16N	Claytonia virginica	18L	Liatris squarrosa	10M	Tradescantia subaspera
12L	Collinsia verna	11K	Lobelia cardinalis	16M	Tradescantia virginiana
43A	Coreopsis tinctoria	13L	Maianthemum racemosum	10M	Trillium flexipes
17L	Dicentra cucullaria	12K	Maianthemum stellatum	16L	Trillium recurvatum
11M	Dodecatheon meadia	12M	Mertensia virginica	12L	Trillium sessile
12N	Echinacea purpurea	16K	Mitchella repens	12L	Uvularia grandiflora
12K	Erythronium albidum	34G	Nuphar lutea	12L	Veronicastrum virginicum
18K	Erythronium americanum				

Figure 4. Native wildflowers planted at the Missouri Botanical Garden.

tion is constantly changing. The data presented here comes from an inventory carried out in 1987 and 1988. We suggest a call to the Garden's plant records office (314-577-5107) before a visit, if seeing a particular species is important. The Garden possesses a large number of familiar spring wildflowers. Some of the most robust and abundant here are Bloodroots, Virginia Bluebells, Blue-eyed Marys, False Solomon's Seals, Spring Beauties, various trilliums, tradescantias, and Celandine poppies. Keep in mind that many flowers bloom in the summer and fall, such as the showy (and most attractive to butterflies) species of *Liatris*.

NATIVE VINES AND SHRUBS
(Figure 5)

Numerous native vines and shrubs are in cultivation at the Garden. Two of these vines are the Cross Vine (*Bignonia capreolata* and the Trumpet Creeper, *Campsis radicans*, both members of the predominatly tropical Trumpet Creeper Family, Bignoniaceae).

Much less attractive, but important to recognize, is Poison Ivy (*Toxicodendron radicans* or *Rhus radicans*, Cashew Family, Anacardiaceae) This vine is displayed to promote recognition so that one may avoid a less favorable encounter in the wild.

The Garden has a number of additional vines in propagation and plans display them within the next year or so.

16N Alnus serrulata
14O Aralia spinosa
10L Aronia melanocarpa
41B Bignonia capreolata
10A Campsis radicans
11B Cornus alternifolia
31G Cornus drummondii
16K Corylus americana
11K Dirca palustris
15K Euonymus atropurpurea
15O Hamamelis vernalis
15J Hamamelis virginiana
13J Ilex decidua
22A Ilex verticillata
14J Itea virginica
12J Lindera benzoin
14M Parthenocissus quinquefolia
16J Ptelea trifoliata
19L Rhododendron prinophyllum
9J Rhus aromatica
10J Rhus copallina
13L Rhus radicans
1Z Salix discolor
11N Sambucus canadensis
12J Staphylea trifolia
11N Viburnum dentatum
3Z Viburnum lentago
12O Viburnum prunifolium

Figure 5. Native shrubs and vines at the Missouri Botanical Garden.

Among the most attractive shrubs are the two native Witch Hazels (Witch Hazel Family, Hamamelidaceae), planted side-by-side to allow easy comparison (29C). The Eastern Witch Hazel (*Hamamelis virginiana*) flowers in late autumn, while the Ozark Witch Hazel (*Hamamelis vernalis*) comes into full bloom late in the winter and creates a delightful surprise (see F. & B Woods 1970).

Plants of Black Haw (11E,12O)(*Viburnum prunifolium*, Honeysuckle Family, Caprifoliaceae) are particularly robust and attractive. They retain their blackish fruits on red stalks well into the winter.

The devil's walking-stick (*Aralia spinosa*, Ginseng Family, Araliaceae), with its enormous compound leaves, forms a thicket at the south end of the Woodland Garden (9M,14O), very near the Alabama Snow-wreath and Pondberry noted earlier. Nearby, Leatherwood (*Dirca palustris*, Mezereum Family, Thymelaeaceae) occurs. It is the only native Missouri representative of family that contains the horticulturally familiar genus *Daphne*. At the opposite end of the Woodland Garden (12M) is our native Azalea (*Rhododendron prinophyllum*, Heath Family, Ericaceae).

FERNS AND FERN ALLIES
(Figure 6)

There is a large patch of Bracken (*Pteridium aquilinum*) in the mausoleum area north of Tower Grove House (24I,10N). This is one of the most widespread plants around the world. Look at the young unfolding fronds for nectaries, which are visited by ants. However, most of the ferns are concentrated toward the southwest portion of the Woodland Garden (10-12M ??). Among the rarest ferns in Missouri, the Netted Chain Fern (*Woodwardia areolata*) is present, thanks to a volunteer who propagated it from spores. The narrow-leaved spleenwort (*Athyrium pycnocarpon*) is robust and has a novel appearance. Next to it is the Horsetail (*Equisetum hye-*

10M	Adiantum pedatum	16L	Matteuccia struthiopteris	10N	Polystichum acrostichoides
10M	Asplenium trichomanes	11M	Onoclea sensibilis	10N	Pteridium aquilinum
11M	Athyrium filix-femina	11M	Osmunda cinnamomea	11M	Thelypteris hexagonoptera
10M	Athyrium pycnocarpon	10M	Osmunda claytoniana	11M	Thelypteris palustris
10M	Cystopteris bulbifera	11M	Osmunda regalis	10M	Woodwardia areolata
10N	Cystopteris fragilis				

Figure 6. Native ferns and fern allies at the Missouri Botanical Garden.

male), a "fernally", which, like ferns, reproduces by spores that germinate into free-living gametophytes. The most conspicuous ferns at the Missouri Botanical Garden belong to the *Osmunda* trio: Cinnamon Fern (*Osmunda cinnamomea*), Interrupted Fern (*O. claytoniana*), and Royal Fern (*O. regalis*). Similar to these and famous for its tasty (but carcinogenic?) fiddleheads, the Ostrich Fern (*Matteuccia struthiopteris*) is abundant (please don't nibble). A paricularly attractive fern to observe is the Maidenhair Fern (*Adiantum pedatum*), Figure 7.

LITERATURE CITED

Lewin, R. 1989. How to get plants into the Conservationists' Ark. Science 244: 32-33.

Long, A. A. 1989. Disjunct populations of the rare shrub, *Neviusia alabamensis* Gray (Rosaceae). Castanea 54: 29-39.

Price, S & G. Rogers. *Boltonia jecurrens* (Compositae): a midwestern U.S. riverine species in decline. Botanical Gardens Conservation News 1(3): 46-49.

Rogers, G. K. & P. Wilmes. 1989. The Alabama Snow Wreath. American Horticulturist 68(4): 40-41.

Steyermark, J. A . 1949. *Lindera mellissaefolia*. Rhodora 51: 153-162.

Teesene, N. 1989. Systematic and ecological studies on *Plantago cordata*. American Horticulturist. pages?

Woods, Fred & Betty. 1970 The Ozark Witchhazel. Missouri Conservationist (March): 3.

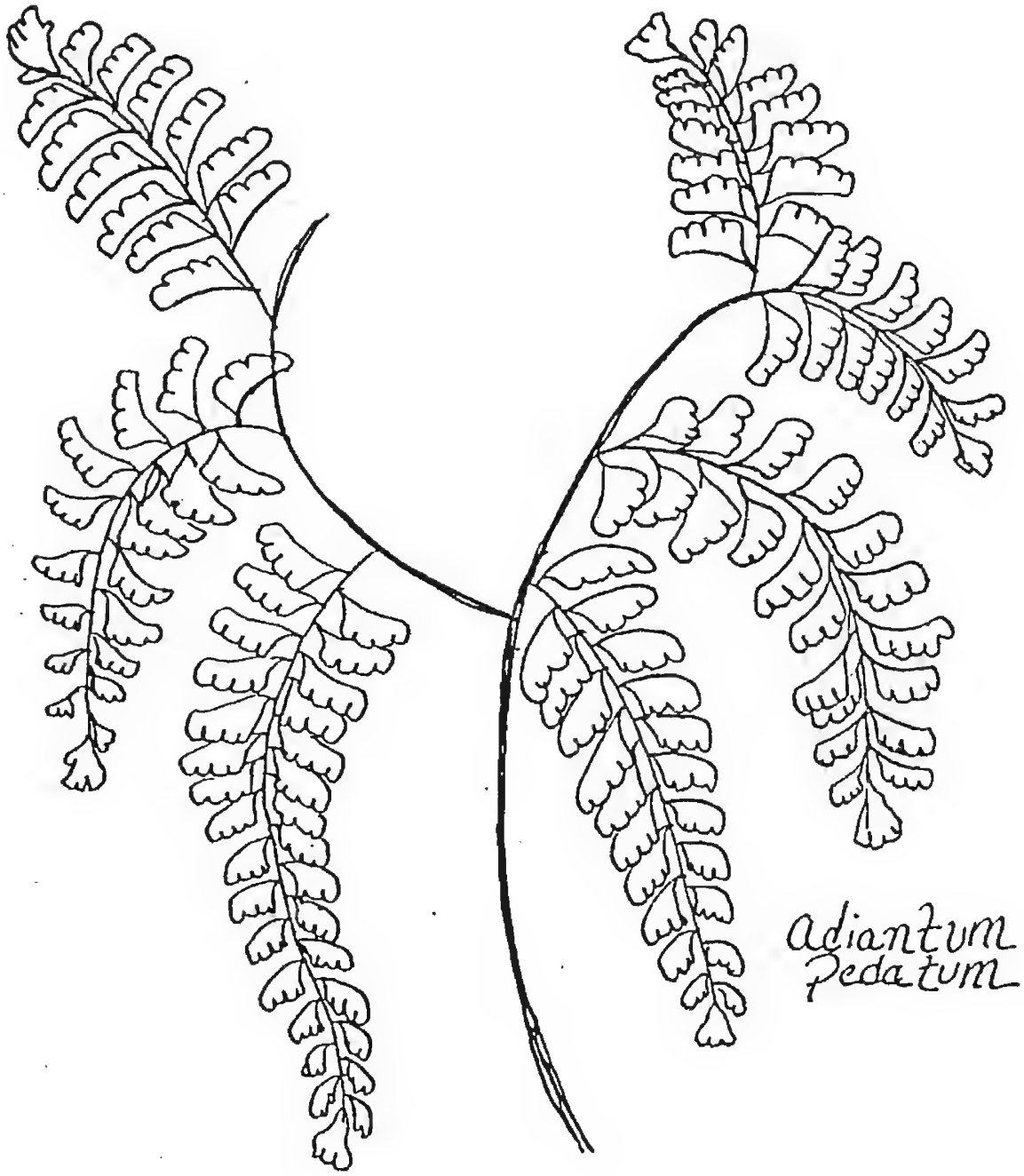


Figure 5. Maidenhair Fern. Drawing by Denise Ulrich.

MISSOURI *CAREX* NOTES 4.
Carex bicknellii var. *opaca* in Missouri

David Castaner
Herbarium, Central Missouri State University
Warrensburg, MO 64093-5053

Carex bicknellii Bailey var. *opaca* Hermann may be added to the flora of Missouri. Plants of this taxon were first collected in Arkansas along river terraces in Lonoke County by Delzie Demaree in May 1937 (*Demaree 57794*, USFS), and in Prairie County (*Demaree 55595*, MICH). The holotype (based on *Demaree 60141* May 1969, US) was described by F. J. Hermann (1972) thirty-five years later. It has also been collected from Love County, in southcentral Oklahoma (*Castaner 1368*, WARM, MICH).

According to Hermann, *Carex bicknellii* var. *opaca* resemble both *C. brittoniana* Bailey and *C. bicknellii* Britton. Typical *Carex bicknellii* is found throughout Missouri while *C. brittoniana* occurs in Texas and north-central Oklahoma (Great Plains Flora Association 1977). The new variety was supposedly like *C. brittoniana* Bailey in having "large, nearly nerveless" perigynia but most similar to *C. bicknellii* Britton in overall characteristics. Unfortunately, Hermann did not make totally clear his reasons for assigning the new variation to *C. bicknellii* rather than *C. brittoniana.*

A plant very much resembling *C. brittoniana* was collected 21 June 1978, in a low open field at the southwest intersection of highways 126 and 71 in Barton County (Figure 1). This plant resembled *C. brittoniana* in having a large coarse appearance, large spikelets, and light-to-dark brown perigynia; however, the lengths of the perigynia (5.5-6.5 mm long) were shorter than typical *C. brittoniana.* In addition, the shape of the perigynia were mostly ovate rather than ovate-reniform and the achenes were elliptic rather than narrowly elliptic. Based on these latter differences, the plant best fits Hermann's *C. bicknellii* var. *opaca.*

Carex bicknellii var. *opaca* from Missouri is briefly described as follows: Plants caespitose; fertile culms 85-90 cm, scabrous below the head; heads, 20-30 mm long, spikelets 4-6, brown, 8-10 x 5-7 mm; leaves 3.5 mm wide, with ends long acuminate to setose; perigynia strongly concave, 5.5-6.5 x 3.5-4 mm, brown, ovate, both dorsal and ventral faces veined; beak 1.5-2.2 mm long; achene 2.2 x 1.6 obovate, shiny brown.

Keying out var. *opaca* will present some problems but it may be assisted by inserting the following key on page 329 in *Flora of Missouri* (Steyermark 1963):

110. Mature perigynia with spreading or ascending loose or free tips...113

113. Mature either perigynia flat or strongly concave but not plano-convex, 5.5-6.5 mm long, nerved on both faces, often nearly transparent; pistillate scales pale brown or straw-colored...113.1

113.1 Perigynia flattened, thin, nearly transparent; ventral face between achene and wing not cork-like; ...*C. bicknellii* Bailey var. *bicknellii*.

113.1 Perigynia strongly concave, firm or subcoriaceous, only slightly transparent if at all; ventral face between achene and wing somewhat corky...*C. bicknellii* var. *opaca* Hermann.

113. Without the above combination of characters; mature perigynia usually plano-convex (one side flat, the other side convex or slightly raised in the middle), pale green, brown, or green and brown; pistillate scales pale brown, yellow-brown with green, or gray green ...114.

A voucher collection of *Castaner 5273*, 21 June 1978, Barton County, Missouri, is deposited in the herbarium at Central Missouri State University (WARM).

LITERATURE CITED

Hermann, F. J. 1972. A New Variety of *Carex bicknellii* from Arkansas. Sida 5(1):49.

Great Plains Flora Association. 1977. *Atlas of the Flora of the Great Plains*. Iowa State University Press, Ames, Iowa. xiii + 600 pp.

Steyermark, J. A. 1963. *Flora of Missouri*. Iowa State University Press, Ames, Iowa. lxxxiii + 1728 pp.

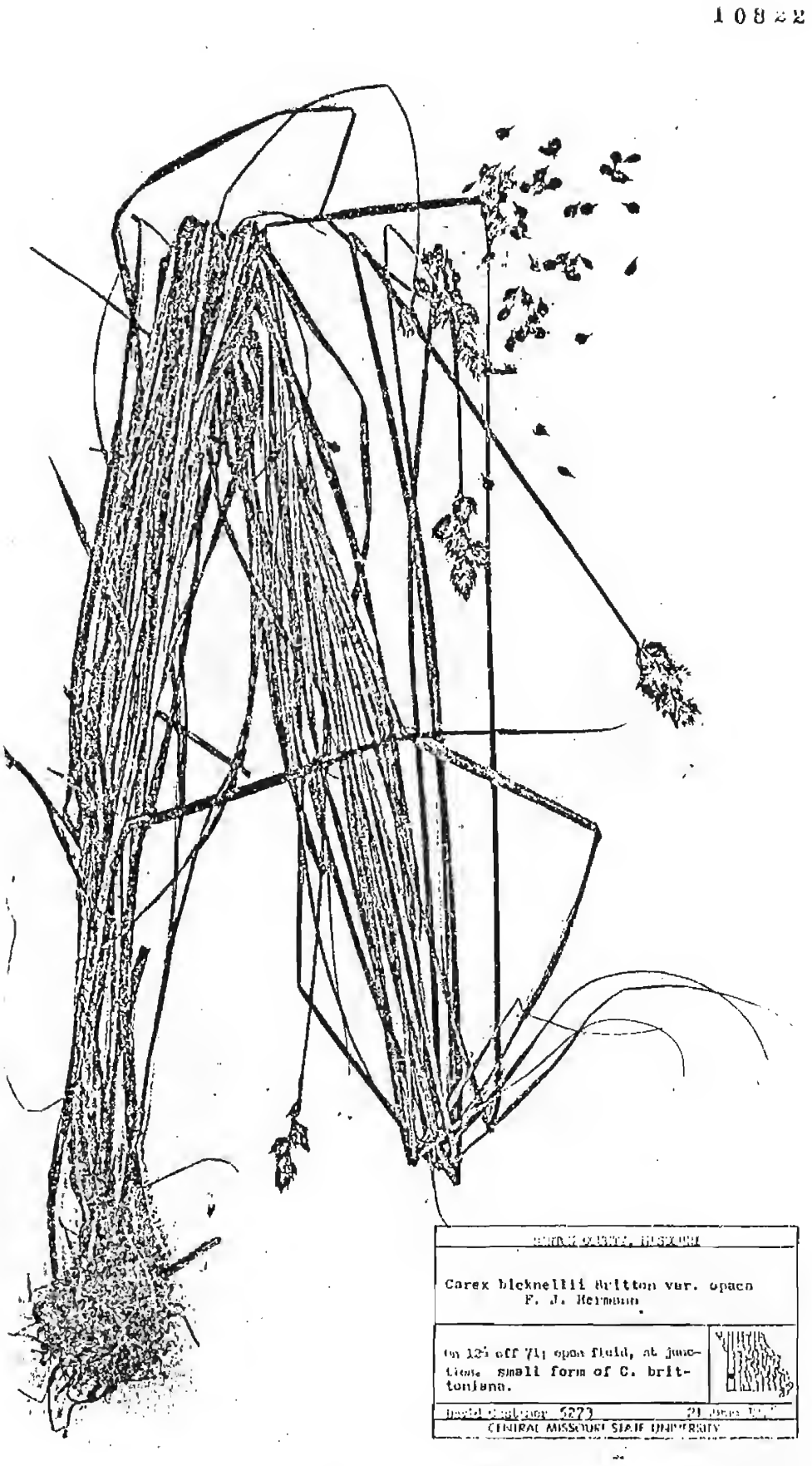


Figure 1. Xerograph of *Carex bicknellii* var. *opaca* (*Castaner 5273*) from Barton County, Missouri.

STUDIES IN THE FLORA OF MISSOURI, I. NEW RECORDS OF INTRODUCED TAXA

George Yatskievych and Dennis Figg
Flora of Missouri Project and
Missouri Department of Conservation

The following new distributional records represent species native to other regions that have become established outside of cultivation in Missouri, and therefore are worthy of addition to the register of the state's flora. These records have been compiled in anticipation of the species' inclusion in a forthcoming *Catalogue of the Flora of Missouri* (in prep.) and eventually in the revised edition of *Steyermark's Flora of Missouri* (in prep.). Because the appearance of a detailed treatment for the species in the forthcoming *Flora* is some years distant, we are also taking this opportunity to bring them to botanists' attention, in the hope that other populations will be discovered in the next few years.

Elaeagnus umbellata Thunb. (Elaeagnaceae), popularly known as autumn olive, is a dense, silvery shrub or small tree frequently planted (especially along highways) as an ornamental, windbreak, or to attract wildlife. This native of Asia commonly escapes from cultivation and has become naturalized at scattered sites in the eastern and central United States, the seeds presumably dispersed by birds. Although this species is probably more widespread in Missouri, the first documented collections from noncultivated material were made only within the last two years:

SHANNON COUNTY: Blue Spring Natural Area, on E bank of Current River, ca. 10 mi E of Eminence; in both shaded and sunny areas of oak-maple forest near spring, 7 May 1989, *Yatskievych & Yatskievych 89-86* (MO).

WARREN COUNTY: 3.5 mi south-southwest of Wright City in and adjacent to Innsbruck Estates, top of south-facing slope, near dirt road, 16 Apr 1988, *Raechal, Steyermark, Holst, & Murphy 119* (MO).

Collectors should seek to document further the distribution of this species in the state. Caution during determination should be exercised, however, because other species of *Elaeagnus* that are commonly cultivated also may escape and are similar in appearance. The silverberry, *E. commutata* Bernh., native to the northeastern and western United States, differs in having a whitish, dry, mealy (rather than a reddish, juicy berry) fruit, and leaves that are silvery above at maturity, rather than greenish. *Elaeagnus multiflora*

Thunb., another native of Asia, is also very similar to *E. umbellata*, differing primarily in that its corolla has the tube and the expanded limb of about equal length, while in the latter species the tube is much longer than the limb. Steyermark (1963) reported a sterile collection from St. Louis County (*McGlashon 7733*, MO), which he thought was one of these two species, but stated that he could not separate them based on vegetative material. Identification of this specimen remains problematic. A final cultivated species is the Russian olive, *E. angustifolia* L., which was included by Steyermark (1963) and differs from all of the above in its lack of brownish scales mixed with the silvery scales common to the leaves of all these taxa. Readers are directed to Bailey (1949) for more detailed information on this genus.

Eriochloa villosa (Thunb.) Kunth (Poaceae) is a coarse, annual cupgrass native to Asia, which has become naturalized at scattered, disjunct sites in Colorado, Florida, Illinois, and Mississippi (Shaw and Webster, 1987). A colony of this species was found last year at the following site:

ST. FRANCOIS COUNTY, east side of U. S. Highway 67, ca. 3 mi north of Bonne Terre, near entrance to St. Francois State Park, in gravel area at base of limestone roadcut, 11 Sep 1988, *Yatskievych & Yatskievych 88-213* (MO).

The plants form low, trailing clumps of intertwining stems, which root at lower nodes.

The genus is distinctive among Missouri grasses in that each spikelet is subtended by a cup-like structure formed by fusion of the first glume with callus tissue. In *E. villosa* this cup is a distinctive yellow and contains specialized cells (elaiosomes) that secrete oil droplets (visible under magnification), which have been implicated in ant dispersal of the seeds (Davidse, 1987).

Steyermark (1963) included two other species of cupgrass for the state. *Eriochloa acuminata* (C. Presl) Kunth [= *E. gracilis* (Fourn.) A. Hitchc., *sensu* Steyermark] differs from other species in the state in its glabrous or only slightly hairy (vs. densely pubescent) leaf blades. *Eriochloa contracta* A. Hitchc., prairie cup grass, differs from *E. villosa* in that its second glume and lemmas are tipped with a short awn, rather than bluntly acute.

Ranunculus ficaria L. (Ranunculaceae), also known as the lesser celandine, is an attractive buttercup native to Eurasia that is sometimes cultivated in gardens. The species has escaped from cultivation or spread as a weed in lawns, waste areas, and mesic forest at scattered stations in the northeastern United States as far south as West Virginia (Strassbaugh and Core, 1978). It is not known from Indiana, but occurs in a single county in southern Illinois (Mohlenbrock, 1986) and has also been discovered recently at two sites in

Michigan (Voss, 1985). Missouri plants apparently belong to a tetraploid cytotype, which has been separated in many European floras as var. *bulbifera* Marsden-Jones. This variety is separated from the diploid var. *ficaria* by a number of minor morphological characters, notably the production of small bulbils in the axils of the stem leaves and a reduction in seed fertility (Green and Thomas, 1961).

In Missouri, the presence of this species has been a well-kept secret for some time. The first station discovered may be described as follows:

ST. LOUIS COUNTY, city of Kirkwood, south side of Argonne Drive between Clark and Woodlawn Avenues at and around site of Grace Episcopal Church, forming dense colonies along roadsides and in lawn, 26 Apr 1972, *Brown s.n.* (MO); same locality, 4 Apr 1989, *Yatskievych, Yatskievych, & Denison 89-05* (MO).

Residents of Kirkwood have been aware of the existence and spread of this pretty buttercup at the site since the turn of the century. Mister Edgar Denison, who kindly brought the plants to our attention, has monitored this population for at least 45 years. The population presently consists of several thousands of plants. It is thus amazing that it escaped the attention of Julian Steyermark, who was well-known to amateur botanists of the area while he was preparing his flora. Although a specimen was first collected in 1972, the species has not previously been reported for the state.

The second station may be described as follows:

COLE COUNTY, edge of Jefferson City near Greenberry Road, in open understory of floodplain forest along Moreau River, with few competing species in periodically flooded area, 4 Apr 1989, *Figg s.n.* (MO).

The population at this site presently consists of a dense patch of 20-30 plants and undoubtedly arose from tubers washed downstream from some unknown site during a flood. It was first discovered in 1988 and has grown slightly since that time.

Ranunculus ficaria possesses relatively large, showy flowers with yellow petals 10-18 mm long and undivided, long-petiolate leaves with rounded to cordate blades. In Steyermark's (1963) this perennial will key closest to *R. cymbalaria* Pursh, but it differs in its much larger flowers (petals 3-5 mm long in the latter) with 3, rather than 5, sepals and in its growth habit: *R. cymbalaria* spreads vegetatively by stolons, while *R. ficaria* possesses fleshy, whitish to brown (at maturity) tubers, which form in clusters among the roots and are

also occasionally formed when bulbils in the leaf axils of the short, aerial stems root and form new plantlets late in the season. The lesser celandine flowers in early spring and tends to frult and die back to ground level by the middle of the summer. It is likely that the species will be found at additional sites, particularly in the southeastern portion of the state, in the future.

ACKNOWLEDGMENTS

We are grateful to Edgar Denison, Luther Raechal, and the late Julian Steyermark for bringing species to our attention. We also thank Gerrit Davidse for assistance with *Eriochloa* determinations and discussion of elaiosomes.

LITERATURE CITED

Bailey, L. H. 1949. *Manual of Cultivated Plants, ed. 2.* MacMillan Publishing Co., New York. 1116 pp.

Davidse, G. 1987. Fruit dispersal in the Poaceae, Ch. 14, pp. 143-155, in *Grass Systematics and Evolution,* T. R. Soderstrom, K. W. Hilu, C. S. Campbell, and M. E. Barkworth, ed. Smithsonian Institution Press, Washington, D.C.. xiv + 473 pp.

Green, P. S. and J. L. Thomas. 1961. The bulbiferous *Ranunculus ficaria.* Rhodora 63: 289-291.

Mohlenbrock, R. H. (1975) *Guide to the Vascular Flora of Illinois, ed. 2.* Southern Illinois Univ. Press, Carbondale, IL. viii + 507 pp. + 2 maps.

Shaw, R. B. and R. D. Webster. 1987. The genus *Eriochloa* (Poaceae: Paniceae) in North and Central America. Sida 12:165-207.

Steyermark, J. A. 1963. *Flora of Missouri.* Iowa State Univ. Press, Ames, IA. 1725 pp. (+ errata, 3 pp., second-sixth printings).

Strassbaugh, P. D. and E. L. Core. 1978. *Flora of West Virginia, ed. 2.* Seneca Books, Grantsville, WV. xl + 1079 pp. (this ed. originally released in 4 fascicles, then published as above with further corrections).

Voss, E. G. 1985. *Michigan flora, part 2.* Bull. Cranbrook Inst. Sci. 59:i-xix + 1-724.

MINUTES OF THE MoNPS BOARD MEETING - 15 APRIL 1989

Present: Karen Haller, Linda Ellis, Dr. & Mrs. David Castaner, Sue Hollis, Ken McCarty, George and Kay Yatskievych, Bill Summers, Ginny Wallace, Gary Shackelford, Jim Bogner, Douglas Ladd, Gary Shackelford, Tim Nigh, Mary Susan Taylor and the Cosmic Presence of Wally Weber; a quorum was lacking so no motions could be voted on.

Call to order by Doug Ladd, thanks to St. Louis Chapter and the Hallers as home hosts for the meeting.

Minutes of the December Meeting read; additions to the minutes offered: The Annual Meeting will be held 17 June on a Saturday, not on the 18th, which is a Sunday. Discussion concerning membership in the Conservation Federation of Missouri was missing, our membership in that organization was not retained, but $400 was earmarked out of the yearly budget for conservation concerns of our own organization, more on that later in this meeting. Minutes approved as corrected.

Treasurer Report; Handout given out by Ginny Wallace from Mervin Wallace.

Total income and cash:	$ 5298.11
Total disbursements:	1941.44
Balance on hand:	$ 3356.67 as of 4-14-89.

COMMITTEE REPORTS

Membership - Brochures handed out to Kansas City and St. Louis Chapter representatives who did not get them at the last meeting.

Newsletter - Sue Hollis resigned as Editor. Linda Ellis requests to pass it on to someone else. Potential candidate suggested by Doug L. needs to be confirmed before announcing. Sue H. offers to continue until the new person is found.

Field Trips - Sunday trip is confirmed, carpool site is announced; data from the newsletter is discussed.

[Interruption at this point - Wally Weber telephones from Springfield, George Yatskievych leaves the room to take the call and receive a report.]

Environmental Education - No report.

Editorial - The new issue of *Missouriensis* is out, plea for new material is released. The new format is much improved and more changes in the format

released. The new format is much improved and more changes in the format are indicated. Two papers have been submitted to date, but needs more. Paul hopes to continue to be up to date and issue all 1989 issues in 1989.

Archives - Only one chapter has sent in material, but many promises are still heard. There seems to be a mythical amount of material out there gathering dust.

Nominating - The committee met and published list, received no new nominations (and never ever have!). As it stands the new slate of officers is: Bill Summers for President, Karen Haller for Vice President, Sylvia Forbs for Secretary, Ken McCarty for Treasurer, and two directorships suggested for Jodie Ebberly and George Yatskievyech. Ballots will be sent out soon.

Missouri Flora Atlas - Springfield Chapter is busy doing spring plantings so Wally couldn't be here today. He has printouts for Steyermark, and requests 15 or more people for the chapters to volunteer to help proof the lists. Volunteers can contact him directly or Chapter representatives can galvanize otherwise corral volunteers and send a list to Wally of where he can send the lists for proofing.

Conservation - A data sheet compiled and written by George was given to Archives describing efforts to ascertain suitable projects or organizations to be the recipient of yearly conservation funds. Three recommendations were presented. First, such expenditures should be reevaluated yearly. Second, the membership should be polled, perhaps through the Petal Pusher, for their suggestions as to how (or whether) such funds should be spent. Third, for 1989, it is recommended to divide the available funds between conservation (perhaps the Prairie Foundation to aid in support of an existing Preserve), propagation (The Center for Plant Conservation appears most worthy), and legislation/education (Conservation Federation in support of specific house bills that MoNPS has already indicated tacit approval). Finally, George suggested that even though $400 is earmarked, the Society is not obligated to spend the funds. It was decided that a new committee to designate these funds was not necessary, the existing environmental/Education Committee would take up the reins. Further discussion will be held at the June meeting.

OLD BUSINESS

Conservation Federation. Membership situation update, 26 December letter sent (copy given to archives) officially resigning MONPS from membership with the CFM.

MONPs Pins. The new prototype was shown by Linda Ellis, of a *Cypripedium* on a white background. The test pin/dye has been paid for, and the

decision made to change the white background to natural gold to bring out the white of the orchid. The order as submitted and the pins will be ready in the first week of May. Considerable discussion ensued concerning just how to go about selling the pins. Price was set as $4.00 each (in line with costs of other pins now on the market). It was suggested that pins should be sold to chapters (or consigned depending on chapter budgets), the chapters could but them for $3.00 and sell them for $4.00, with cost of the pin approximately $2.25, the state profit would be $1.75 per pin. Linda Ellis will design a card to go with each pin explaining the design and advertising the Society. Sue Taylor requests 50 be sent to her as soon as ready for she has a ready market (international too!) at the Missouri Botanical Garden.

Native Plant Legislation - Bill (924) went to Committee. A letter from Paul Redfearn protesting the bill was read aloud to the Board. Discussion concerning pros and cons of the bill and potential bureaucratic headaches for botanists resulting from the passage of the bill was debated. Through accidental error of misrepresentation, Mervin W. had testified to the Committee in favor of the bill as an official representative of the Society, when actually he was supposed to appear as a concerned private citizen. Ginny Wallace announced that the bill was dead this year, and testimony will start from scratch again next year. Doug Ladd requests input on policy formation in preparation for the new hearings. The consensus this evening is that the present board members support the bill, but not as written; it is suggested that the total number of plants removed be limited, that limits be placed on economic exploitation of plants and garden transplanters, and removal of plants on the rare and endangered list be denied. George Yatskievych suggested the formation of a committee to study the bill. Doug Ladd would prefer whole board involvement, David Castaner prefers a Committee to gather data. Sue Taylor suggests major discussion groups associated with the next board meeting. Chapter representatives will speak to their chapters concerning the matter.

10th Anniversary Update - Ginny Wallace passed out a preliminary mock up of the festivities. It was queried whether each Chapter will have an exhibit. Other organizations will be invited to display exhibits, such as The Center for Plant Conservation, several nurseries, and Powell Gardens. Non- members of MoNPS are cordially invited to attend the meeting which is a celebration of our founding. There will also be Sunday field trips. The Jeffersonian Chapter will host the meeting. Ken McCarty was volunteered to host a Friday Social, but that may change due to distance considerations. The meeting will be casual attire, space for 100 people, total cost will be about $25 per person, plus lodging.

NEW BUSINESS

Global 2000 - this is a proposal to recover 28 Federally listed plants and animals in our own region (data sheet given to Archives). Mike Sweet, Endangered Species Coordinator requests that we read the handout, address questions to Ginny Wallace, and line items to Congressmen by May; take the info back to chapters for discussion.

Grant Proposal - Postponed due to lack of quorum.

Notice Request - Robert Mohlenbrock asks permission to advertise in Petal Pusher; the question was deferred to the Newsletter Editor for analysis.

Chapter Establishment Handbook and Statement of Purpose and Philosophy discussion were deferred until the June Meeting, held in a special session scheduled for Sunday morning at 8 am.

CHAPTER REPORTS - deferred due to lateness of the hour.

ANNOUNCEMENTS

Lottie Epstein resigned as St. Louis Chapter Representative, Gary Schackelford was elected for the position.

MEETING ADJOURNED.

RESPECTFULLY SUBMITTED BY:

Mary Susan Taylor

MISSOURI BOTANICAL RECORD

Wallace R. Weber, Department of Biology
William Corcoran, Department of Geosciences,
Southwest Missouri State University
Springfield, MO 65804-0095

The *Missouri Botanical Record* is the official register for new county records of all vascular plant taxa in Missouri. To qualify for inclusion in this record, a voucher specimen of the record taxon must be deposited in a recognized herbarium and verified by the curator. Following the format used below, please submit all records to Dr. Wallace R. Weber, Department of Biology, Southwest Missouri State University, Springfield, MO 65804-0095.

In the *Flora of Missouri*, Steyermark used only a single map number to refer to each species, even though several subspecific taxa were listed. In these instances, various symbols were used to represent each taxon on a single Missouri map with counties. In the *Missouri Botanical Record* a decimal system is used, with .1 assigned to the first subspecific taxon listed by Steyermark under each map, .2 for the second, and so on. Point (.99) is used to designate a species which Steyermark included one or more subspecific taxa, but which was not specified by the collector. Point zero nine (.09) identifies a taxon not included by Steyermark.

Contributors for this issue include: Hazel Ayers (Gatewood, MO), Nine Bickness (Missouri Department of Conservation), William Davit (Shaw Arboretum, Missouri Botanical Garden), Greg Gremaud (Missouri Department of Conservation), Bruce Schuette (Missouri Department of Natural Resources), Timothy Smith (Missouri Department of Conservation) and John Woemmel (Springfield, MO).

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		EQUISETACEAE			
10.99	*Equisetum arvense*	Lincoln	07/09/83	*Schuette 22*	MDNR
13.20	*Equisetum hyemale* var.*affine*	Lincoln	09/03/87	*Schuette 1602*	MO
		POLYPODIACEAE			
29	*Pellaea glabella*	Lincoln	08/06/83	*Schuette 216*	MDNR
33	*Cheilanthes lanosa*	Barrry	08/12/88	*Smith 2771*	MO
38	*Matteucia struthiopteris*	Christian	07/05/88	*Smith 2735*	MO
56	*Thelypteris hexagonoptera*	Lincoln	07/30/83	*Schuette 193*	MDNR
		TYPHACEAE			
70	*Typha angustifolia*	Lincoln	07/06/84	*Schuette 595*	MDNR
		SPARGANIACEAE			
73	*Sparganium androcladium*	Lincoln	07/14/84	*Schuette 616*	MDNR
		NAJADACEAE			
79	*Potamogeton diversifolius*	Lincoln	08/09/86	*Schuette 1334*	MDNR
87	*Najas gracillima*	Lincoln	08/20/85	*Schuette 1210*	MDNR
		GRAMINEAE			
107.99	*Bromus purgans*	Lincoln	06/14/87	*Schuette 1464*	MO
113	*Bromus japonicus*	Lincoln	06/09/87	*Schuette 1515*	MO
116	*Bromus tectorum*	Lincoln	05/13/87	*Schuette 1404*	MO
132.99	*Poa annua*	Lincoln	04/02/87	*Schuette 1337*	MDNR
133	*Poa compressa*	Lincoln	09/21/84	*Schuette 755*	MDNR
137	*Poa sylvestris*	Lincoln	05/16/84	*Schuette 485*	MDNR
185.99	*Elymus virginicus*	Montgomery	07/30/87	*Schuette 155*	MO
187.99	*Hystrix patula*	Lincoln	07/10/83	*Schuette 163*	MDNR
195.99	*Sphenopholis obtusata*	Lincoln	06/07/85	*Schuette 1041*	MDNR
213	*Agrostis tenuis*	Barry	08/12/88	*Smith 2778*	MO
217	*Cinna arundinacea*	Montgomery	09/23/87	*Schuette 1634*	MO
232	*Muhlenbergia capillaris*	Montgomery	10/18/87	*Schuette 1675*	MO

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
274.99	*Leersia oryzoides*	Lincoln	09/12/84	*Schuette 741*	MDNR
278.99	*Digitaria sanguinalis*	Lincoln	09/07/84	*Schuette 732*	MDNR
338.99	*Echinochloa crus-galli*	Lincoln	07/09/84	*Schuette 600*	MDNR
339	*Echinochloa muricata* var. *muricata*	Franklin	08/00/88	*Davit s.n.*	MO
351	*Arthraxon hispidus* var. *hispidus*	Lincoln	09/30/87	*Schuette 1656*	MDNR
	CYPERACEAE				
366.99	*Cyperus rivularis*	Lincoln	07/21/87	*Schuette 1587*	MO
371	*Cyperus acuminatus*	Montgomery	08/04/88	*Schuette 173*	MO
372	*Cyperus erythrorhizos*	Montgomery	08/04/88	*Schuette 1866*	MO
413	*Scirpus americanus*	Lincoln	06/28/87	*Schuette 1502*	MO
415	*Scirpus validus*	Lincoln	08/10/83	*Schuette 225*	MDNR
424	*Scirpus validus*	Lincoln	05/28/85	*Schuette 982*	MDNR
436	*Scleria triglomerata*	Lincoln	07/18/84	*Schuette 618*	MDNR
447	*Carex convoluta*	Lincoln	06/27/87	*Schuette 1495*	MO
457.99	*Carex annectans*	Lincoln	05/30/83	*Schuette 93*	MDNR
478	*Carex bicknellii*	Lincoln	05/14/87	*Schuette 1512*	MO
488.99	*Carex umbellata*	Lincoln	04/22/86	*Schuette 1283*	MO
493	*Carex meadii*	Lincoln	05/04/84	*Schuette 458*	MO
505	*Carex oligocarpa*	Lincoln	06/26/87	*Schuette 1493*	MO
517.10	*Carex complanata* var. *hirsuta*	Montgomery	05/21/87	*Schuette 1416*	MDNR
542	*Carex squarrosa*	Lincoln	06/14/87	*Schuette 1448*	MO
548.99	*Carex lupulina*	Lincoln	06/14/87	*Schuette 1449*	MO
	LEMNACEAE				
564	*Wolffia papulifera*	Lincoln	07/18/86	*Schuette 1319*	MDNR
	JUNCACEAE				
591	*Juncus interior*	Lincoln	07/10/84	*Schuette 597*	MDNR
94.99	*Juncus biflorus*	Lincoln	07/26/85	*Schuette 1127*	MDNR
599	*Juncus brachycarpus*	Lincoln	07/05/84	*Schuette 584*	MDNR
607	*Luzula bulbosa*	Lincoln	04/13/85	*Schuette 928*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		LILIACEAE			
609	*Stenanthium gramineum* var. *gramineum*	Lincoln	07/05/84	*Schuette 590*	MDNR
626.99	*Hemerocallis fulva*	Lincoln	06/10/85	*Schuette 1045*	MDNR
632	*Camassia angusta*	Benton	06/23/88	*Gremaud s.n.*	MO
639	*Asparagus officinalis*	Lincoln	07/05/84	*Schuette 588*	MDNR
642	*Polygonatum biflorum*	Lincoln	06/02/84	*Schuette 522*	MDNR
645.99	*Trillium sessile*	Lincoln	04/06/85	*Schuette 969*	MDNR
652.10	*Smilax herbacea* var. *lasioneura*	Lincoln	08/09/87	*Schuette 1580*	MO
		IRIDACEAE			
678.99	*Sisyrinchium campestre*	Lincoln	05/10/83	*Schuette 58*	MDNR
		ORCHIDACEAE			
682.99	*Cypripedium calceolus*	Lincoln	05/20/83	*Schuette 80*	MDNR
685	*Orchis spectabilis*	Lincoln	05/13/83	*Schuette 59*	MDNR
689	*Habenaria lacera*	Lincoln	06/12/83	*Schuette 107*	MDNR
696	*Triphora trianthophora*	Morgan	08/23/88	*Gremaud s.n.*	MO
700	*Spiranthes gracilis*	Lincoln	08/26/82	*Schuette 427*	MDNR
707	*Corallorhiza wisteriana*	Lincoln	05/16/83	*Schuette 72*	MDNR
708	*Corallorhiza odontorhiza*	Lincoln	09/02/85	*Schuette 1225*	MDNR
710	*Liparis lilifolia*	Lincoln	06/07/83	*Schuette 102*	MDNR
712	*Aplectrum hyemale*	Lincoln	01/14/83	*Schuette 1*	MDNR
		SALICACEAE			
725.99	*Salix humilis*	Lincoln	04/13/84	*Schuette 435*	MDNR
		ULMACEAE			
784.99	*Celtis occidentalis*	Lincoln	06/08/84	*Schuette 541*	MDNR
		POLYGONACEAE			
814	*Rumex crispus*	Lincoln	06/12/87	*Schuette 1440*	MO

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
823	*Polygonum aviculare* var. *aviculare*	Lincoln	09/21/84	*Schuette 752*	MDNR
	CHENOPODIACEAE				
854	*Chenopodium pallescens*	Lincoln	07/23/85	*Schuette 854*	MDNR
	AMARANTHACEAE				
877	*Amaranthus tamariscinus*	Lincoln	09/05/84	*Schuette 724*	MDNR
	NYCTAGINACEAE				
891	*Mirabilis nyctaginea*	Greene	08/31/87	*Woemmel s.n.*	SMS
	CARYOPHYLLACEAE				
914.99	*Arenaria serpyllifolia*	Lincoln	04/18/87	*Schuette 1376*	MDNR
920	*Stellaria graminea*	Lincoln	05/31/85	*Schuette 984*	MDNR
924	*Cerastium nutans*	Lincoln	04/14/87	*Schuette 924*	MDNR
926.99	*Cerastium viscosum*	Lincoln	04/17/87	*Schuette 1375*	MDNR
929	*Cerastium pumilum*	Lincoln	04/21/87	*Schuette 1382*	MDNR
930	*Holosteum umbellatum*	Lincoln	04/06/87	*Schuette 1341*	MDNR
943.10	*Silene virginica* X *S. caroliniana* var. *wherryi*	Ripley	10/00/88	*Ayers s.n.*	MO
	NYMPHACEAE				
958	*Brasenia schreberi*	Lincoln	07/01/85	*Schuette 1072*	MDNR
	RANUNCULACEAE				
987	*Ranunculus recurvatus* var. *recurvatus*	Montgomery	05/21/87	*Schuette 1426*	MO
991.99	*Ranunculus septentrionalis*	Lincoln	04/06/83	*Schuette 22*	MDNR
991.99	*Ranunculus septentrionalis*	Montgomery	04/13/88	*Schuette 1731*	MDNR
998	*Anemone caroliniana*	Montgomery	04/20/88	*Schuette 1735*	MDNR
1004.10	*Clematis virginiana* f. *missouriensis*	Ripley	10/31/88	*Ayers s.n.*	MO
1008	*Clematis pitcheri*	Lincoln	06/07/84	*Schuette 527*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		FUMARIACEAE			
1036	*Corydalis aurea*	Montgomery	04/20/88	*Schuette 1737*	MO
		CRUCIFERAE			
1056	*Thlaspi arvense*	Lincoln	04/18/87	*Schuette 1377*	MDNR
1056	*Thlaspi arvense*	Greene	04/23/88	*Woemmel s.n.*	SMS
1057	*Thlaspi perfoliatum*	Lincoln	04/06/83	*Schuette 20*	MDNR
1062.99	*Draba verna*	Lincoln	04/13/84	*Schuette 1374*	MDNR
1063	*Draba brachycarpa*	Lincoln	04/17/87	*Schuette 1374*	MDNR
1073	*Cardamine hirsuta*	Lincoln	04/06/87	*Schuette 1338*	MDNR
1080.99	*Arabis hirsuta*	Lincoln	07/15/87	*Schuette 1532*	MO
1083.10	*Arabis shortii* var. *phalacrocarpa*	Lincoln	04/22/87	*Schuette 1387*	MDNR
1088	*Rorippa sessiliflora*	Lincoln	09/23/84	*Schuette 756*	MDNR
1090.99	*Rorippa islandica*	Lincoln	06/16/84	*Schuette 1316*	MDNR
		CAPPARIDACEAE			
1106	*Cleome houtteana*	McDonald	09/14/88	*Bicknese 32*	MO
		ROSACEAE			
1139	*Spiraea prunifolia*	Lincoln	04/22/87	*Schuette 1384*	MDNR
1149.10	*Pyrus coronaria* var. *lancifolia*	Lincoln	05/17/84	*Schuette 491*	MDNR
1185.99	*Crataegus mollis*	Lincoln	05/03/86	*Schuette 1293*	MDNR
1191.99	*Crataegus pruinosa*	Lincoln	05/15/87	*Schuette 1408*	MO
1218	*Geum vernum*	Lincoln	06/14/84	*Schuette 457*	MDNR
1221	*Rubus idaeus* var. *strigosus*	Greene	05/24/88	*Woemmel s.n.*	SMS
1228	*Rubus enslenii*	Lincoln	05/05/85	*Schuette 952*	MDNR
1241	*Agrimonia pubescens*	Lincoln	07/27/84	*Schuette 634*	MDNR
1242	*Rosa multiflora*	Lincoln	05/27/84	*Schuette 495*	MDNR
1258	*Prunus mexicana*	Lincoln	04/12/87	*Schuette 1361*	MO
		LEGUMINOSAE			
1272	*Gymnocladus dioica*	Lincoln	07/08/87	*Schuette 1520*	MO

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
1297.10	*Trifolium reflexum* var. *glabrum*	Lincoln	05/28/85	*Schuette 977*	MDNR
1299	*Trifolium campestre*	Lincoln	05/31/85	*Schuette 983*	MDNR
1308	*Lotus corniculatus*	Lincoln	08/08/85	*Schuette 1153*	MDNR
1335	*Coronilla varia*	Lincoln	06/01/87	*Schuette 1436*	MO
1343	*Desmodium sessilifolium*	Lincoln	07/16/85	*Schuette 1098*	MDNR
1345	*Desmodium ciliare*	Lincoln	07/23/85	*Schuette 1108*	MDNR
1354	*Lespedeza repens*	Lincoln	08/02/85	*Schuette 1138*	MDNR
1355.99	*Lespedeza procumbens*	Lincoln	07/25/85	*Schuette 1120*	NDNR
1359	*Lespedeza intermedia*	Lincoln	09/21/84	*Schuette 754*	MDNR
1366	*Lespedeza cuneata*	Lincoln	09/10/84	*Schuette 737*	MDNR
1388.99	*Apios americana*	Greene	06/00/87	*Woemmel s.n.*	SMS
	GERANIACEAE				
1413.99	*Geranium carolinianum*	Lincoln	06/08/84	*Schuette 542*	MDNR
	ZYGOPHYLLACEAE				
1418	*Tribulus terrestris*	Greene	07/30/87	*Woemmel s.n.*	SMS
	EUPHORBIACEAE				
1431	*Croton glandulosus*	Lincoln	08/17/85	*Schuette 1197*	MDNR
1444.99	*Euphorbia dentata*	Ripley	10/00/88	*Ayers s.n.*	MO
1446.10	*Euphorbia heterophylla* var. *graminifolia*	Ripley	10/00/88	*Ayers s.n.*	MO
	CALLITRICHACEAE				
1465	*Callitriche heterophylla* var.*heterophylla*	Lincoln	06/01/98	*Schuette 1803*	MO
	LIMNANTHACEAE				
1466	*Floerkia proserpinacoides*	Montgomery	04/13/88	*Schuette 1723*	MO
	VITACEAE				
1500	*Ampelopsis cordata*	Lincoln	07/12/85	*Schuette 1092*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		MALVACEAE			
1518	*Malva neglecta*	Lincoln	08/08/85	*Schuette 1149*	MDNR
1523	*Callirhoe papaver* var. *papaver*	Benton	07/07/88	*Gremaud s.n.*	MO
		HYPERICACEAE			
1537	*Hypericum perforatum*	Lincoln	06/13/84	*Schuette 550*	MDNR
1546	*Hypericum gentianoides*	Lawrence	08/21/88	*Bicknese 167*	MO
		CISTACEAE			
1553	*Lechea villosa*	Montgomery	07/30/87	*Schuette 1544*	MO
		VIOLACEAE			
1560	*Viola missouriensis*	Lincoln	04/15/87	*Schuette 1394*	MDNR
1561.99	*Viola sororia*	Montgomery	04/13/88	*Schuette 1729*	MDNR
1568.99	*Viola pensylvanica*	Montgomery	04/15/86	*Schuette 1264*	MDNR
		LYTHRACEAE			
1582	*Ammania coccinea*	Polk	08/19/87	*Woemmel s.n.*	SMS
		ONAGRACEAE			
1591	*Jussiaea repens* var. *glabrescens*	Lincoln	08/08/84	*Schuette 655*	MDNR
		UMBELLIFERAE			
1642	*Torilis japonica*	Lincoln	06/16/86	*Schuette 1317*	MDNR
1670.10	*Thaspium trifoliatum* var. *flavum*	Lincoln	05/29/84	*Schuette 509*	MDNR
		PYROLACEAE			
1690	*Monotropa hypopithys*	Lincoln	09/20/82	*Schuette 428*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		PRIMULACEAE			
1700	*Lysimachia nummularia*	Lincoln	08/05/87	*Schuette 1558*	MO
		GENTIANACEAE			
1735	*Gentiana clausa*	Ripley	10/31/88	*Ayers s.n.*	MO
		APOCYNACEAE			
1745	*Vinca minor*	Lincoln	04/06/83	*Schuette 17*	MDNR
1747.99	*Apocynum androsaemifolium*	Lincoln	05/31/88	*Schuette 1801*	MO
1750.99	*Apocynum sibiricum*	Lincoln	06/07/84	*Schuette 532*	MDNR
		ASCLEPIADACEAE			
1760	*Asclepias syriaca* var. *kansana*	Ripley	10/00/88	*Ayers s.n.*	MO
1764	*Asclepias stenophylla*	Montgomery	05/26/88	*Schuette 1795*	MO
		CONVOLVULACEAE			
1780.99	*Convolvulus sepium* var.*sepium*	Lincoln	07/14/84	*Schuette 612*	MDNR
		POLEMONIACEAE			
1797	*Phlox pilosa* var.*pilosa*	Lincoln	05/14/87	*Schuette 1407*	MDNR
		BORAGINACEAE			
1836.99	*Mertensia virginica*	Montgomery	04/05/86	*Schuette 1239*	MDNR
		VERBENACEAE			
1844	*Verbena bracteata*	Lincoln	08/02/85	*Schuette 1135*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		LABIATAE			
1857	*Scutellaria incana*	Montgomery	08/04/83	*Schuette 1872*	MO
1866	*Nepeta cataria*	Lincoln	07/22/88	*Schuette 1847*	MO
1867.99	*Glechoma hederacea*	Montgomery	04/15/86	*Schuette 1265*	MDNR
1870.99	*Physostegia virginiana* var. *virginiana*	Lincoln	08/28/85	*Schuette 1220*	MDNR
1871	*Physostegia angustifolia*	Lincoln	08/17/85	*Schuette 1196*	MDNR
1877	*Lamium purpureum*	Lincoln	04/12/83	*Schuette 24*	MDNR
1878	*Lamium amplexicaule*	Lincoln	04/29/84	*Schuette 450*	MDNR
1911.99	*Mentha arvensis* var. *villosa*	Lincoln	09/25/84	*Schuette 767*	MDNR
		SOLONACEAE			
1921	*Solanum americanum*	Lincoln	09/23/83	*Schuette 244*	MDNR
1923	*Solanum sarachoides*	Polk	10/07/87	*Woemmel s.n.*	SMS
1939	*Lycium halimifolium*	Greene	09/11/87	*Woemmel s.n.*	SMS
1942	*Datura innoxia*	Greene	08/29/87	*Woemmel s.n.*	SMS
		SCROPHULARIACEAE			
1989	*Veronica polita*	Lincoln	04/13/84	*Schuette 432*	MDNR
2006.99	*Castilleja coccinea*	Lincoln	05/03/83	*Schuette 50*	MDNR
		OROBANCHACEAE			
2015	*Orobanche uniflora*	Lincoln	05/18/83	*Schuette 79*	MDNR
		LENTIBULARIACEAE			
2017	*Utricularia gibba*	Lincoln	07/30/83	*Schuette 200*	MDNR
		PHRYMACEAE			
2025	*Phryma leptostachya*	Lincoln	07/21/83	*Schuette 179*	MDNR
		PLANTAGINACEAE			
2030	*Plantago aristata*	Lincoln	06/13/85	*Schuette 1050*	MDNR
2033	*Plantago virginica*	Lincoln	06/10/84	*Schuette 548*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
		RUBIACEAE			
2038	*Galium virgatum*	Lincoln	06/08/84	*Schuette 547*	MDNR
2050.99	*Diodia virginiana*	Lincoln	08/28/83	*Schuette 256*	MDNR
		CAMPANULACEAE			
2106	*Lobelia inflata*	Polk	08/19/87	*Woemmel s.n.*	SMS
2107.99	*Lobelia spicata*	Lincoln	06/08/83	*Schuette 105*	MDNR
		COMPOSITAE			
2126	*Eupatorium incarnatum*	Ripley	10/00/88	*Ayers s.n.*	MO
2141	*Grindelia lanceolata*	Lincoln	08/28/87	*Schuette 1595*	MO
2151.99	*Solidago speciosa*	Lincoln	09/28/83	*Schuette 294*	MO
2152.99	*Solidago missouriensis*	Lincoln	07/29/88	*Schuette 1853*	MO
2168	*Solidago gymnospermoides*	Lincoln	09/28/83	*Schuette 292*	MDNR
2178.99	*Aster azureus*	Lincoln	10/14/83	*Schuette 317*	MDNR
2178.99	*Aster azureus*	Montgomery	10/07/87	*Schuette 1663*	MO
2187.99	*Aster laevis*	Montgomery	10/18/87	*Schuette 1672*	MO
2200.99	*Aster simplex*	Lincoln	10/22/84	*Schuette 822*	MDNR
2206	*Erigeron philadelphicus*	Montgomery	05/26/88	*Schuette 1789*	MO
2208.99	*Erigeron strigosus*	Lincoln	06/19/83	*Schuette 113*	MDNR
2260	*Echinacea purpurea* var. *purpurea* f. *purpurea*	Ripley	10/00/88	*Ayers s.n.*	MO
2266	*Ratibida columnifera* f. *columnifera*	Carroll	02/11/88	*Gremaud s.n.*	MO
2282	*Helianthus decapetalus*	Lincoln	07/27/84	*Schuette 635*	MDNR
2286	*Verbesina helianthoides*	Lincoln	06/24/84	*Schuette 583*	MDNR
2298	*Bidens cernua* var. *cernua* f.*cernua*	Lincoln	09/23/84	*Schuette 757*	MDNR
2300	*Bidens comosa*	Lincoln	09/05/84	*Schuette 720*	MDNR
2306	*Bidens bipinnata*	Lincoln	09/28/86	*Schuette 1333*	MDNR
2317	*Helenium flexuosum*	Lincoln	06/14/88	*Schuette 1846*	MO
2329	*Matricaria matricarioides*	Greene	04/23/88	*Woemmel s.n.*	SMS
2341A	*Erechtites hieracifolia* var. *hieracifolia*	Lincoln	09/12/86	*Schuette 1332*	MDNR
2349	*Senecio pauperculus*	Lincoln	05/28/84	*Schuette 503*	MDNR
2360	*Cirsium carolinianum*	Bollinger	06/07/88	*Schuette 1815*	MO
2370	*Centaurea maculosa*	Lincoln	07/27/85	*Schuette 2370*	MDNR

MAP	TAXON	COUNTY	DATE	COLLECTOR	HERB
2373	*Serinia oppositifolia*	Greene	04/28/88	*Woemmel s.n.*	SMS
2385	*Taraxacum officinale*	Lincoln	04/16/84	*Schuette 437*	MDNR
2397	*Agoseris cuspidata*	Lincoln	04/20/88	*Schuette 1745*	MO
2401	*Pyrrhopappus carolinianus*	Lincoln	08/31/84	*Schuette 715*	MDNR
2404	*Prenanthes aspera*	Lincoln	09/08/86	*Schuette 1330*	MDNR
2404	*Prenanthes asper*	Greene	10/05/87	*Woemmel s.n.*	SMS